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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/245,288	02/05/1999	AKIHIRO MURATA	101937	4735

25944 7590 04/07/2003

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EXAMINER
GRAYBILL, DAVID E

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 04/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/245,288	MURATA, AKIHIRO	
	Examiner	Art Unit	
	David E Graybill	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6,7,9,10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6,7,9,10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-6-2 has been entered.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 4, 6, 7, 9, 10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following have insufficient literal antecedent basis:

Claim 1 "the semiconductor device";

Claims 1, 6 and 7 "the substrate main body that is cut along predetermined through-holes."

In the rejections infra, reference labels are generally recited only for the first recitation of identical claim language.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 6, 7, 9, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (5293067).

As cited in the previous Office actions, Thompson teaches the following:

1. A substrate for semiconductor apparatus, comprising: a substrate main body 16 having a first surface for mounting the semiconductor device, a second surface [the perimeter surface perpendicular to the first surface] and a plurality of through-holes 22, 24; a plurality of leads 20 formed on the first surface, the plurality of leads extending from a peripheral area toward a central area of the substrate main body; and a plurality of conduction sections 24 formed on the second surface, each conduction section defining at least part of an external terminal, the conduction sections being electrically connected to the leads via the plurality of through-holes 24, internal surfaces of the through-holes are conductive and connected to respective leads, and the through-holes

are arranged corresponding to the respective leads such that the substrate main body that is cut along predetermined through-holes 24 allows remaining through-holes 24 connected to the respective leads to define the conduction sections.

3. The substrate for semiconductor apparatus of 1, wherein the substrate main body defines a central area [area within perimeter] and has one through-hole 24 on the side of the central area for each of the leads, and the conduction sections are electrically connected to the leads through the through-holes.

4. The substrate for semiconductor apparatus of 1, wherein the substrate main body has the plurality of through-holes for each of the leads, and the conduction sections are electrically connected to each corresponding one of the leads through a predetermined one of the through-holes.

6. An electronic apparatus having a circuit substrate 10 mounted with the substrate for semiconductor apparatus according to 1, corresponding to the respective leads such that the substrate main body that is cut along predetermined through-holes allows remaining through-holes of the respective leads to define the conduction sections.

7. A semiconductor apparatus, comprising: a semiconductor device 10 having a plurality of electrodes 14; a substrate main body

having a first surface for mounting the semiconductor device, a second surface and a plurality of through-holes; a plurality of leads formed on the first surface, the plurality of leads extending from a peripheral area toward a central area of the substrate main body; and a plurality of conduction sections formed on the second surface, one of the conduction sections defining an external terminal, the conduction sections being electrically connected to the leads through the plurality of through-holes, internal surfaces of the through-holes are conductive and connected to respective leads, and the through-holes are arranged corresponding to the respective leads such that the substrate main body that is cut along predetermined through-holes allows remaining through-holes of the respective leads to define the conduction sections.

9. The semiconductor apparatus of 7, wherein the substrate main body defines a central area and has one through-hole on the side of the central area for each of the leads, and the conduction sections are electrically connected the leads through the through-holes.

10. The semiconductor apparatus of 7, wherein the substrate main body has the plurality of through-holes for each of the leads, and the conduction sections are electrically

connected to each corresponding one of the leads through a predetermined one of the through-holes.

12. An electronic apparatus having a circuit substrate mounted with the semiconductor apparatus according to claim 7.

To further clarify the teaching such that the substrate main body that is cut along predetermined through-holes 24 allows remaining through-holes 24 connected to the respective leads to define the conduction sections, it is noted that, as cited, Thompson teaches that that the substrate main body along predetermined through-holes 24 allows remaining through-holes 24 connected to the respective leads to define the conduction sections. However, Thompson does not appear to explicitly teach the process limitation, "that is cut." Nonetheless, the product of Thompson inherently possesses the structural characteristics imparted by the process limitation. See In re Fitzgerald, Sanders, and Bagheri, 205 USPQ 594 (CCPA 1980).

Applicant's remarks filed 12-6-2 have been fully considered and are adequately addressed in the rejection supra.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/308-7722.

David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
3-Apr-03